UNIT TERMINAL OBJECTIVE

5-3 At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a neurological problem.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 5-3.1 Describe the incidence, morbidity and mortality of neurological emergencies. (C-1)
- 5-3.2 Identify the risk factors most predisposing to the nervous system. (C-1)
- 5-3.3 Discuss the anatomy and physiology of the organs and structures related to nervous system. (C-1)
- 5-3.4 Discuss the pathophysiology of non-traumatic neurologic emergencies. (C-1)
- 5-3.5 Discuss the assessment findings associated with non-traumatic neurologic emergencies. (C-1)
- 5-3.6 Identify the need for rapid intervention and the transport of the patient with non-traumatic emergencies. (C-1)
- 5-3.7 Discuss the management of non-traumatic neurological emergencies. (C-1)
- 5-3.8 Discuss the pathophysiology of coma and altered mental status. (C-1)
- 5-3.9 Discuss the assessment findings associated with coma and altered mental status. (C-1)
- 5-3.10 Discuss the management/ treatment plan of coma and altered mental status. (C-1)
- 5-3.11 Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for seizures. (C-1)
- 5-3.12 Discuss the pathophysiology of seizures. (C-1)
- 5-3.13 Discuss the assessment findings associated with seizures. (C-1)
- 5-3.14 Define seizure. (C-1)
- 5-3.15 Describe and differentiate the major types of seizures. (C-3)
- 5-3.16 List the most common causes of seizures. (C-1)
- 5-3.17 Describe the phases of a generalized seizure. (C-1)
- 5-3.18 Discuss the pathophysiology of syncope. (C-1)
- 5-3.19 Discuss the assessment findings associated with syncope. (C-1)
- 5-3.20 Discuss the management/ treatment plan of syncope. (C-1)
- 5-3.21 Discuss the pathophysiology of headache. (C-1)
- 5-3.22 Discuss the assessment findings associated with headache. (C-1)
- 5-3.23 Discuss the management/ treatment plan of headache. (C-1)
- 5-3.24 Describe the epidemiology, including the morbidity/mortality and prevention strategies, for neoplasms. (C-1)
- 5-3.25 Discuss the pathophysiology of neoplasms. (C-1)
- 5-3.26 Describe the types of neoplasms. (C-1)
- 5-3.27 Discuss the assessment findings associated with neoplasms. (C-1)
- 5-3.28 Discuss the management/ treatment plan of neoplasms. (C-1)
- 5-3.29 Define neoplasms. (C-1)
- 5-3.30 Recognize the signs and symptoms related to neoplasms. (C-1)
- 5-3.31 Correlate abnormal assessment findings with clinical significance in the patient with neoplasms. (C-3)
- 5-3.32 Differentiate among the various treatment and pharmacological interventions used in the management of neoplasms. (C-3)
- 5-3.33 Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with neoplasms. (C-3)
- 5-3.34 Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for abscess. (C-1)
- 5-3.35 Discuss the pathophysiology of abscess. (C-1)
- 5-3.36 Discuss the assessment findings associated with abscess. (C-1)
- 5-3.37 Discuss the management/ treatment plan of abscess. (C-1)
- 5-3.38 Define abscess. (C-1)

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- 5-3.39 Recognize the signs and symptoms related to abscess. (C-1)
- 5-3.40 Correlate abnormal assessment findings with clinical significance in the patient with abscess. (C-3)
- 5-3.41 Differentiate among the various treatment and pharmacological interventions used in the management of abscess. (C-3)
- 5-3.42 Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with abscess. (C-3)
- 5-3.43 Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for stroke and intracranial hemorrhage. (C-1)
- 5-3.44 Discuss the pathophysiology of stroke and intracranial hemorrhage. (C-1)
- 5-3.45 Describe the types of stroke and intracranial hemorrhage. (C-1)
- 5-3.46 Discuss the assessment findings associated with stroke and intracranial hemorrhage. (C-1)
- 5-3.47 Discuss the management/ treatment plan of stroke and intracranial hemorrhage. (C-1)
- 5-3.48 Define stroke and intracranial hemorrhage. (C-1)
- 5-3.49 Recognize the signs and symptoms related to stroke and intracranial hemorrhage. (C-1)
- 5-3.50 Correlate abnormal assessment findings with clinical significance in the patient with stroke and intracranial hemorrhage. (C-3)
- 5-3.51 Differentiate among the various treatment and pharmacological interventions used in the management of stroke and intracranial hemorrhage. (C-3)
- 5-3.52 Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with stroke and intracranial hemorrhage. (C-3)
- 5-3.53 Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for transient ischemic attack. (C-3)
- 5-3.54 Discuss the pathophysiology of transient ischemic attack. (C-1)
- 5-3.55 Discuss the assessment findings associated with transient ischemic attack. (C-1)
- 5-3.56 Discuss the management/ treatment plan of transient ischemic attack. (C-1)
- 5-3.57 Define transient ischemic attack. (C-1)
- 5-3.58 Recognize the signs and symptoms related to transient ischemic attack. (C-1)
- 5-3.59 Correlate abnormal assessment findings with clinical significance in the patient with transient ischemic attack. (C-3)
- 5-3.60 Differentiate among the various treatment and pharmacological interventions used in the management of transient ischemic attack. (C-3)
- 5-3.61 Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with transient ischemic attack. (C-3)
- 5-3.62 Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for degenerative neurological diseases. (C-1)
- 5-3.63 Discuss the pathophysiology of degenerative neurological diseases. (C-1)
- 5-3.64 Discuss the assessment findings associated with degenerative neurological diseases. (C-1)
- 5-3.65 Discuss the management/ treatment plan of degenerative neurological diseases. (C-1)
- 5-3.66 Define the following: (C-1)
 - a. Muscular dystrophy
 - b. Multiple sclerosis
 - c. Dystonia
 - d. Parkinson's disease
 - e. Trigeminal neuralgia
 - f. Bell's palsy
 - g. Amyotrophic lateral sclerosis
 - h. Peripheral neuropathy
 - i. Myoclonus
 - i. Spina bifida

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k. Poliomyelitis

- 5-3.67 Recognize the signs and symptoms related to degenerative neurological diseases. (C-1)
- 5-3.68 Correlate abnormal assessment findings with clinical significance in the patient with degenerative neurological diseases. (C-3)
- 5-3.69 Differentiate among the various treatment and pharmacological interventions used in the management of degenerative neurological diseases. (C-3)
- 5-3.70 Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with degenerative neurological diseases. (C-3)
- 5-3.71 Integrate the pathophysiological principles of the patient with a neurological emergency. (C-3)
- 5-3.72 Differentiate between neurological emergencies based on assessment findings. (C-3)
- 5-3.73 Correlate abnormal assessment findings with the clinical significance in the patient with neurological complaints. (C-3)
- 5-3.74 Develop a patient management plan based on field impression in the patient with neurological emergencies. (C-3)

AFFECTIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 5-3.75 Characterize the feelings of a patient who regains consciousness among strangers. (A-2)
- 5-3.76 Formulate means of conveying empathy to patients whose ability to communicate is limited by their condition. (A-3)

PSYCHOMOTOR OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 5-3.77 Perform an appropriate assessment of a patient with coma or altered mental status. (P-3)
- 5-3.78 Perform a complete neurological examination as part of the comprehensive physical examination of a patient with coma or altered mental status. (P-3)
- 5-3.79 Appropriately manage a patient with coma or altered mental status, including the administration of oxygen, oral glucose, 50% dextrose and narcotic reversal agents. (P-3)
- 5-3.80 Perform an appropriate assessment of a patient with syncope. (P-3)
- 5-3.81 Appropriately manage a patient with syncope. (P-3)
- 5-3.82 Perform an appropriate assessment of a patient with seizures. (P-3)
- 5-3.83 Appropriately manage a patient with seizures, including the administration of diazepam or lorazepam. (P-3)
- 5-3.84 Perform an appropriate assessment of a patient with stroke and intracranial hemorrhage or TIA. (P-3)
- 5-3.85 Appropriately manage a patient with stroke and intracranial hemorrhage or TIA. (P-3)
- 5-3.86 Demonstrate an appropriate assessment of a patient with a chief complaint of weakness. (P-3)

DECLARATIVE

- I. Introduction
 - A. Epidemiology
 - 1. Incidence
 - 2. Mortality/ morbidity
 - 3. Risk factors
 - 4. Prevention strategies
 - 5. Anatomy and physiology review
- II. General system pathophysiology, assessment and management
 - A. Physiology
 - 1. Alterations in cognitive systems
 - 2. Alterations in cerebral homeostasis
 - 3. Alterations in motor control
 - 4. Central nervous system disorders
 - a. Trauma
 - b. Cerebrovascular disorders
 - c. Tumors
 - d. Infection
 - e. Inflammation
 - f. Degenerative diseases
 - g. Hydrocephalus
 - 5. Peripheral nervous system disorders
 - 6. Neuromuscular junction disorders
 - B. Assessment findings
 - History
 - a. General health
 - b. Previous medical conditions
 - c. Medications
 - d. Previous experience with complaint
 - e. Time of onset
 - f. Seizure activity
 - 2. Physical
 - a. General appearance
 - b. Assess for level of consciousness
 - (1) Mood
 - (2) Thought
 - (3) Perceptions
 - (4) Judgment
 - (5) Memory and attention
 - c. Speech
 - d. Skin
 - e. Posture and gait
 - f. Vital signs
 - (1) Hypertension
 - (2) Hypotension
 - (3) Heart rate/ fast or slow
 - (4) Ventilation rate/ quality

- (5) Temperature/ fever
- g. Head/ neck
 - (1) Facial expression
 - (2) Eyes
 - (a) Acuity
 - (b) Fields
 - (c) Position & alignment
 - (d) Iris
 - (e) Pupils
 - (f) Extraocular muscles
 - (3) Ears
 - (a) Auditory acuity
 - (4) Nose
 - (5) Mouth
 - (a) Odors on breath
- h. Thorax and lungs
 - (1) Auscultate
- i. Cardiovascular
 - (1) Heart rate
 - (2) Rhythm
 - (3) Bruits
 - (4) Jugular vein pressure
 - (5) Auscultation
 - (6) ECG monitoring
- j. Abdomen
- k. Nervous
 - (1) Cranial nerves
 - (2) Motor system
 - (a) Muscle tone
 - (b) Muscle strength
 - (c) Flexion
 - (d) Extension
 - (e) Grip
 - (f) Coordination
- I. Assessment tools
 - (1) Pulse oximetry
 - (2) End tidal CO₂
 - (3) Blood glucose
- 3. Ongoing assessment
- C. Management
 - Airway and ventilatory support
 - a. Oxygen
 - b. Positioning
 - c. Assisted ventilation
 - d. Suction
 - e. Advanced airway device
 - 2. Circulatory support
 - a. Venous access
 - b. Blood analysis

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- 3. Non-pharmacological interventions
 - a. Positioning
 - b. Spinal precautions
- 4. Pharmacological interventions
 - a. Antianxiety agent
 - b. Anticonvulsant
 - c. Antiinflammatories
 - d. Diuretic
 - e. Sedative-hypnotic
 - f. Skeletal muscle relaxant
 - g. Hyperglycemic
 - h. Antihypoglycemic
 - i. Vitamin
 - i. Emetic
- 5. Psychological support
- 6. Transport considerations
 - a. Appropriate mode
 - b. Appropriate facility

III. Specific injuries/ illnesses

- A. Stroke and intracranial hemorrhage
 - Epidemiology
 - a. Incidence
 - b. Mortality/ morbidity
 - c. Risk factors
 - d. Prevention strategies
 - e. Anatomy and physiology review
 - 2. Pathophysiology of regional disruption of cerebral blood flow
 - a. Thrombus
 - b. Hemorrhage
 - (1) Subarachnoid
 - (2) Intracerebral
 - (3) Cerebellar
 - c. Embolus
 - 3. Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications
 - (4) Previous experience with complaint
 - (5) Time of onset
 - (6) Seizure activity
 - (7) Headache
 - (8) Nose bleed
 - (9) Others
 - b. Physical
 - (1) Standard physical exam for the patient with potential neurological event
 - 4. Management
 - a. Airway and ventilatory support

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- (1) Oxygen
- (2) Positioning
- (3) Assisted ventilation
- (4) Suction
- (5) Advanced airway device
- b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
- c. Non-pharmacological interventions
 - (1) Positioning
 - (2) Spinal precautions
- d. Pharmacological interventions
 - (1) Anticonvulsants
 - (2) Antiinflammatories
 - (3) Vasodilator
 - (4) Diuretic
 - (5) Skeletal muscle relaxant
 - (6) Hyperglycemic
 - (7) Antihypoglycemic
 - (8) Vitamin
 - (9) Thrombolytics
 - (10) Neuroprotectives
- e. Psychological support
- f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility
- B. Transient ischemic attack
 - Epidemiology
 - a. Incidence
 - b. Mortality/ morbidity
 - c. Risk factors
 - d. Prevention strategies
 - e. Anatomy and physiology review
 - 2. Pathophysiology
 - a. Transient neurological deficits
 - b. Partial disruptions of blood flow
 - (1) Hemorrhagic
 - (2) Vasospasm
 - (3) Subarachnoid
 - (4) Intracerebral
 - (5) Cerebellar
 - c. Partially occlusive
 - (1) Emboli
 - (2) Thrombi
 - 3. Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications

(4) Previous experience with complaint (5) Time of onset (6)Seizures (7)Headache (8) Nosebleed b. **Physical** Standard physical exam for patient with potential neurological event (1) 4. Management a. Airway and ventilatory support (1) Oxygen (2)Positionina (3)Assisted ventilation (4) Suction Advanced airway device (5) Circulatory support b. Venous access (1) (2)Blood analysis Non-pharmacological interventions C. Positioning (1) (2)Spinal precautions d. Pharmacological interventions (1) Anticonvulsants (2) **Antiinflammatories** (3)Diuretic (4) Skeletal muscle relaxant (5) Hyperglycemic (6)Anti-hypoglycemic (7)Vitamin Psychological support e. Transport considerations f. Appropriate mode (1) (2)Appropriate facility C. Epilepsy/ Seizures **Epidemiology** Incidence a. Mortality/ morbidity b. Risk factors c. d. Prevention strategies Anatomy and physiology review e. 2. Pathophysiology Unexpected electrical discharge of neurons in brain a. Types b. (1) Generalized (a) Grand mal (tonic-clonic) i) Preictal phase (aura)

> Postictal phase Tonic (b)

Tonic phase Clonic phase

ii)

iii)

iv)

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- (c) Clonic
- (d) Petit mal
- (2) Partial
 - (a) Simple partial (e.g., Jacksonian)
 - (b) Complex partial (e.g., psychomotor or temporal lobe)
- (3) Status epilepticus
- c. Causes other than epilepsy
 - (1) Idiopathic
 - (2) Fever
 - (3) Neoplasms
 - (4) Infection
 - (5) Metabolic
 - (a) Hypoxia
 - (b) Hypoglycemia
 - (c) Thyrotoxicosis
 - (d) Hypocalcemia
 - (6) Drug intoxication
 - (7) Drug withdrawal
 - (8) Head trauma
 - (9) Eclampsia
 - (10) Cerebral degenerative diseases
- Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications
 - (4) Previous seizures
 - (5) Time of onset
 - (6) Seizure activity
 - (a) Duration
 - (b) Number of events
 - (c) Consciousness between
 - b. Physical
 - (1) Standard physical exam for patient with potential neurological event
 - (2) Pertinent findings
 - (a) Tongue laceration(s)
 - (b) Head
 - i) Hemorrhage
 - ii) Wounds
 - (c) GI/GU
 - i) Incontinence of bladder
 - ii) Incontinence of bowel
- 4. Management
 - a. Airway and ventilatory support
 - (1) Oxygen
 - (2) Positioning
 - (3) Assisted ventilation
 - (4) Suction
 - (5) Advanced airway device

- b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
- c. Non-pharmacological interventions
 - (1) Protection from injury
 - (2) Positioning
 - (3) Spinal precautions
- d. Pharmacological interventions
 - (1) Anticonvulsants
 - (2) Antiinflammatories
 - (3) Skeletal muscle relaxant
 - (4) Hyperglycemic
 - (5) Anti-hypoglycemic
 - (6) Vitamin
- e. Psychological support
- f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility
- D. Syncope
 - Pathophysiology
 - a. Brief loss of consciousness caused by transient cerebral hypoxia
 - b. Caused by lack of oxygen, glucose or seizure activity in the brain
 - 2. Assessment findings
 - a. Perceived as a sensation of light-headedness
 - 3. Management
 - a. Differentiate possible causes
 - (1) Seizure
 - (2) Other
 - b. Airway management
 - c. Oxygen
 - d. Reassure
 - e. Treat underlying cause
- E. Headache
 - Epidemiology
 - a. Incidence
 - b. Mortality/ morbidity
 - c. Risk factors
 - d. Prevention strategies
 - e. Anatomy and physiology review
 - 2. Pathophysiology
 - a. Primary
 - (1) Continuum of tension and migraine
 - b. Cluster
 - (1) Unknown
 - c. General thoughts
 - (1) Central serotonergic transmission abnormalities
 - (2) Vascular structure inflammation
 - (3) Neurogenic inflammation
 - (4) Platelet aggregation with release of vasoactive substances

- 3. Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications
 - (4) Previous experience with complaint
 - (5) Time of onset
 - b. Physical
 - (1) Standard exam for patient with potential neurological event
- 4. Management
 - a. Airway and ventilatory support
 - (1) Oxygen
 - (2) Positioning
 - (3) Suction
 - (4) Assisted ventilation
 - (5) Suction
 - (6) Advanced airway device
 - b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
 - c. Non-pharmacological interventions
 - (1) General comfort measures
 - d. Pharmacological interventions
 - (1) Antiemetics
 - (2) Rehydration
 - (3) Pain control
 - e. Psychological support
 - f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility
- F. Neoplasms
 - 1. Epidemiology
 - a. Incidence
 - b. Mortality/ morbidity
 - c. Risk factors
 - (1) Genetics
 - (2) Exposure to radiation
 - (3) Tobacco
 - (4) Occupational
 - (5) Pollution
 - (6) Medications
 - (7) Diet
 - (8) Viruses
 - d. Prevention strategies
 - e. Anatomy and physiology review
 - 2. Pathophysiology
 - a. Tumors
 - b. Metabolic disorders
 - c. Hematologic disorders

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- d. Immunosuppression
- e. Psychosocial effects
- f. Staging
- g. Types
- 3. Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications
 - (4) Previous experience with complaint
 - (5) Time of onset
 - (6) Seizure activity
 - (7) Headache
 - (8) Nosebleed
 - (9) Type and timing of prior treatment
 - (a) Chemotherapy
 - (b) Radiation therapy
 - (c) Holistic and other nontraditional approaches
 - (d) Experimental treatment
 - b. Physical
 - (1) Standard physical exam for patient with potential neurological event
- 4. Management
 - a. Airway and ventilatory support
 - (1) Oxygen
 - (2) Positioning
 - (3) Assisted ventilation
 - (4) Suction
 - (5) Advanced airway device
 - b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
 - c. Non-pharmacological interventions
 - (1) Positioning
 - (2) Spinal precautions
 - d. Pharmacological interventions
 - (1) Anticonvulsants
 - (2) Antiinflammatories
 - (3) Diuretic
 - (4) Skeletal muscle relaxant
 - (5) Hyperglycemic
 - (6) Antihypoglycemic
 - (7) Vitamin
 - e. Psychological support
 - f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility
- G. Abscess
 - 1. Epidemiology
 - a. Incidence

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- b. Mortality/ morbidity
- c. Risk factors
- d. Prevention strategies
- e. Anatomy and physiology review
- 2. Pathophysiology
- 3. Assessment findings
 - a. History
 - (1) General health
 - (2) Previous medical conditions
 - (3) Medications
 - (4) Previous experience with complaint
 - (5) Time of onset
 - (6) Seizure activity
 - (7) Headache
 - b. Physical
 - (1) Standard physical exam for patient with potential neurological event
- 4. Management
 - a. Airway and ventilatory support
 - (1) Oxygen
 - (2) Positioning
 - (3) Assisted ventilation
 - (4) Suction
 - (5) Advanced airway device
 - b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
 - c. Non-pharmacological interventions
 - (1) Positioning
 - d. Pharmacological interventions
 - e. Psychological support
 - f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility
- H. Degenerative neurological diseases
 - 1. Epidemiology
 - a. Incidents
 - b. Mortality/ morbidity
 - c. Risk factors
 - d. Prevention strategies
 - e. Anatomy and physiology review
 - 2. Pathophysiology
 - a. Muscular dystrophy
 - (1) Genetic disease
 - (a) DNA
 - (2) Degeneration of muscle fibers
 - (3) Biochemical defect
 - (4) Types
 - (a) Duchenne
 - (b) Fascioscapulohumeral

- (c) Limb girdle
- (d) Myotonic
- (5) Effects on CNS
- (6) Incidence
- (7) Characteristics
- b. Multiple sclerosis
 - (1) Inflammatory disease
 - (2) Immune disorder/ CNS myelin
 - (3) Demyelination of nerve sheaths
 - (4) Progressively deteriorate
 - (5) Effects on CNS
 - (6) Incidence
 - (7) Characteristics
- c. Dvstonia
 - (1) Alterations in muscle tone
 - (2) Inhibition of muscle
 - (3) Types
 - (a) Focal
 - (b) Secondary
 - (c) Torsion
 - (d) Spasm
 - (e) Tic
 - (4) Incidence
 - (5) Characteristics
 - (6) latrogenic
- d. Parkinson's disease
 - (1) Degenerative disease basal ganglia
 - (2) Dopaminergic nigrostriatal pathway
 - (3) Primary and secondary disorders
 - (4) Incidence
 - (a) Occurs after 40 years
 - (b) Leading cause of neurologic disability >60 years
 - (c) 130 in 100,000 persons
 - (d) Estimated 500,000 in United States
 - (5) Characteristics
- e. Central pain syndrome
 - (1) Trigeminal nerve infection or disease
 - (2) Tic douloureux
 - (3) Causes
 - (a) Tumor
 - (b) Lesions
 - (c) Medications (phenothiazine)
 - (4) Incidents
 - (5) Characteristics
- f. Bell's palsy
 - (1) Facial paralysis
 - (2) Causes
 - (a) Post-trauma
 - (b) Herpes simplex

- (c) Lyme disease
- (d) Idiopathic
- (3) Incidence
 - (a) Most common form of facial paralysis
 - (b) 23 in 100,000 or 1 in 60 to 70 persons in a lifetime
- (4) Characteristics
- g. Amyotrophic lateral sclerosis
 - (1) Progressive motor neuron disease
 - (2) Types
 - (a) Spinal muscular atrophy
 - (b) Bulbar palsy
 - (c) Primary lateral sclerosis
 - (d) Pseudobulbar palsy
 - (3) Incidence
 - (4) Characteristics
- h. Peripheral neuropathy
 - (1) Axons/ spinal cord neurons injured
 - (2) Autonomic nerve fibers
 - (3) Incidence
 - (4) Characteristics
- Myoclonus
 - (1) Involuntary random muscular contractions
 - (2) Fasciculation
 - (3) Metabolic and neurologic disorders
 - (4) Incidence
 - (5) Characteristics
- j. Spina bifida
 - (1) Defects of neural tube closure
 - (a) Meningocele
 - (b) Myelomeningocele
 - (2) Vertebral defect
 - (3) Incidence
 - (4) Characteristics
- k. Polio (poliomyelitis)
 - (1) Acute infectious inflammation of gray matter of spinal cord
 - (2) Enteroviruses
 - (3) Pathways
 - (a) Blood-CNS barrier
 - (b) Motor neuron
 - (4) Histopathologic findings
 - (5) Progressive
 - (6) Incidence
 - (7) Characteristics
- 3. Assessment findings
 - a. History
 - (1) Acute or chronic
 - (2) General health
 - (3) Previous medical conditions
 - (4) Medications

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- (5) Experience with complaint
- (6) Time of onset
- (7) Seizure activity
- b. Physical
 - (1) Standard physical exam for patient with potential neurological event
- 4. Management
 - a. Airway and ventilatory support
 - (1) Oxygen
 - (2) Positioning
 - b. Circulatory support
 - (1) Venous access
 - (2) Blood analysis
 - c. Non-pharmacological interventions
 - (1) Positioning
 - d. Pharmacological interventions
 - (1) Hyperglycemic
 - (2) Antihypoglycemic
 - (3) Antihistamine (for medication-caused dystonic reactions)
 - (4) Analgesics
 - (5) Steroids
 - (6) Dopaminergics
 - e. Psychological support
 - f. Transport considerations
 - (1) Appropriate mode
 - (2) Appropriate facility

IV. Integration

- A. Develop management strategies, based on the pathophysiological principles, for the following patient presentations
 - 1. Coma/ decreased level of consciousness
 - 2. Headache
 - 3. Weakness
 - 4. Vertigo
 - Seizure